INTEROPERABILITY AND STANDARDS COMMITTEE

REPORT OF FINDINGS AND RECOMMENDATIONS TO THE KHIE COORDINATING COUNCIL

JULY 2010

1.0 Executive Summary

The importance of standards to promote interoperability can not be overstated. The Commonwealth recognizes the need to adopt HHS established interoperability standards and certification requirements. These standards may cover coding, storage, interfaces, security regimes (including access and authentication protocols, data recovery, back-up, continuity, and auditing), organizational processes and technical functions for data sharing. Adhering to each standard is critical in achieving interoperability to support user adoption and meaningful use.

The Interoperability and Standards Committee has been tasked with assisting GOEHI in developing a plan that includes the incremental development of technical infrastructure and functionality of the KHIE to support health information exchange across the continuum of care, leverage shared directories and other services, facilitate Inter-State connectivity, and support connectivity to NHIN.

Among the Committee's Recommendations are:

IS 1.0 Keep providers/administrators informed and up-to-date on new developments.

- IS 1.1 Create a WIKI/Blog/SharePoint, Listservs and e-news letters for use in sharing various tools, information and techniques.
- IS 1.2 State membership and participation in standards committees and organizations such as HL7 and certifying organizations.
- IS 1.3 Communication through forums (both virtual and real), newsletters and meetings to discuss the current state of KHIE and future plans.

IS 2.0 Identify strategies for leveraging current public and private HIE capabilities to complement and support ONC requirements by assessing HIE capabilities through a survey to identify and develop complementary functionality, standards of compatibility, and integration of Master Patient Index (MPI) and Record Locator Service (RLS) capabilities.

IS 3.0 Pursue the development of future functionality, with the following priorities in mind:

1. KHIE should become the **on-ramp to state registries** that are required by ARRA (i.e., immunization, syndromic surveillance, & reportable lab data).

2. Incorporate **bi-directional functionality** with existing networks (Regional, State and National).

3. Develop **master facility and master clinician database.**

4. Develop **secure messaging.**

5. Develop and agree to **unique identifiers for patients.**

6. Develop **tools for federated MPI's and RLS** as the KHIE reaches out into other HIEs.

7. Become the **on-ramp to the NHIN.**

8. Understand **"brokers" medical information systems vendor's approaches** to the problem (i.e. McKesson /Relay Health, Emdeon, Availity, Surescripts, etc.)

IS 4.0 Continue to identify interdependencies and risks; develop mitigation strategies to address these risks.

2.0 Committee Charter

The Interoperability and Standards Committee was tasked with developing a set of recommendations to assist GOEHI in creating a Strategic and Operational Plan for HIE in Kentucky. The Committee's Charter was prepared by the GOEHI team based on the guidance provided by the ONC and reflects a longer-term scope of work to be carried out over the course of the four-year HIE Cooperative Agreement and short-term deliverables to be presented to the KHIE Coordinating Council during its July 30, 2010 meeting. The short-term deliverables position GOEHI to fulfill the "key accomplishments" to be met by state grantees in the first two years as specified by the ONC in the State HIE Cooperative Agreement Funding Opportunity Announcement (FOA).

Table 2.1 Interoperability and Standards Committee Charter

Purpose	Advise and assist the GOEHI and the KHIE Coordinating Council to incrementally develop the technical infrastructure and functionality of the KHIE to support health information exchange across the continuum of care, leverage shared directories and other services, facilitate Inter-State connectivity, and support connectivity to the NHIN.
Scope of Work	Identify strategies for leveraging current HIE capacities, such as RHIOs, and if (and how) other existing technical services and data repositories (both public & private) to support and maximize the potential for statewide HIE. Identify potential issues facing early adopters of HIT with systems that are not

	standards compliant and potential mitigation strategies. Plan incrementally for further development of the technical infrastructure and functionally (including core services and value-added services) required to meet existing and future needs, including meaningful use, to support of health information exchange across the continuum of care through a process that: 1) identified common needs; 2) assesses options; 3) determines value & costs; and, 4) prioritizes implementation. Advise CHFS on the adoption of interoperability guidelines and standards that are consistent with those developed by ONC, facilitate inter-state connectivity, and support connectivity to the NHIN. Identify interdependencies and risks (including risks to security and privacy, etc.) and develop strategies to minimize and/or mitigate risks.
Deliverables	Recommend strategies for keeping developers and other technology providers/administrators informed and up to-date with developments in a fair and open manner. Identify strategies for leveraging current public and private HIE capacities, including technical services, shared directories, data repositories, etc. Prioritize recommendations for the development of future functionality of the KHIE. Identify interdependencies and risks (including risks to security and privacy, etc.) and strategies to minimize or mitigate the risks.

3.0 Committee Members

Table 3.1 Interoperability and Standards Committee Members

Member	Affiliation
Rusty Shanklin - CHAIR	Chief Information Officer Pikeville Medical Center Pikeville, KY
Steve Baker	IT Executive Director UK Healthcare Lexington, KY
David Bensema	Physician Executive Central Baptist Hospital Lexington, KY
Sean McPhillips	Consultant/Health IS/IT Integration CSC (current project with UK) Florence, KY
Jack Harja	Humana, Inc. Louisville, KY
Michael R. Brown	Corporate IT Director Baptist Healthcare System Louisville, KY
Valerie Majors	Director, Health Information Management Western State Hospital Hopkinsville, KY
Trudie Frantz	Director Information Systems University Physicians Associates Louisville, KY
Derek B. White	eHealth Strategic Consultant Humana Louisville, KY
Mike Whealan	UofL Healthcare Louisville, KY

4.0 Approach

The Interoperability and Standards development committee had an initial meeting in Frankfort on May 28, 2010, and 6 weekly telephone conference meetings, thereafter. In the first meeting the Committee discussed the deliverables and decided to begin by reviewing other state plans. After this research the Committee brainstormed ideas and then split up in sub task groups to create more narrative behind each of the four items and arrive at a set of recommendations to guide development of the State HIE Strategic and Operational Plan.

The biggest obstacle is that the standards are evolving rapidly. The Committee's original work was based on the assumption that CCHIT would become the sole Authorized Testing and Certification Body (ONC-ATCB), but, in late June, it was announced in the ONC's Final Rule that multiple ONC-ATCBs would be authorized; consequently, this committee will need to work closely with GOEHI and OATS to ensure that the KHIE is positioned to respond rapidly to the evolving nature of HIT standards.

5.0 Findings and Recommendations

Keeping Providers/Administrators Informed

IS 1.0 Keep providers/administrators informed and up-to-date on new developments.

- IS 1.1 Create a WIKI/Blog/SharePoint, Listservs and e-news letters for use in sharing tools, information and techniques.
- IS 1.2 State membership and participation in standards committee and organizations such as HL7 & and certifying organizations.
- IS 1.3 Communication via forums/ (both virtual and real), newsletters and meetings to discuss current state and future plans.

Discussion:

As outlined above, KHIE should have frequent e-news letters (monthly or bi-weekly). Each provider or administrator could request to be added to the mailing list from the main web site. It would update stakeholders on developments that have taken place or are currently underway or planned for the near-term or long-term future. It also would monitor and report on national developments, including the NHIN, and assess the projected impact on the KHIE.

Along with the e-news letter, GOEHI and OATS should maintain access to a SharePoint site and provide updates on the GOEHI website. This would enable providers to keep up with the latest information regarding the KHIE and provide them with technical information to use in the implementation or development of their own EMR and connectivity to the KHIE.

Strategies for Leveraging Current Public and Private HIE Capabilities

IS 2.0 Identify strategies for leveraging current public and private HIE capabilities to complement and support ONC requirements by assessing HIE capabilities through a survey to identify and develop complementary functionality, standards of compatibility and integration of Master Patient Index (MPI) and Record Locator Service (RLS) capabilities. ONC requires that the state plans **shall** address and enable:

- E-prescribing
- Receipt of structured lab results
- Sharing patient care summaries across unaffiliated organizations

These components support Stage 1 Meaningful Use for eligible providers.

The sharing of patient care summaries will be enhanced when multiple HIEs can share data from their provider constituencies. This is especially important in a state such as Kentucky where other local and state HIEs have been or are establishing a presence within their respective communities. Emphasis will be placed on complementary functionality, standardization of communication protocols and integration of MPI and RLS capabilities.

A. Develop and execute HIE capabilities assessment survey for complementary state / local HIEs (Intra- and Inter-state) to include:
    a. Current functionality
    b. Planned functionality
    c. MPI and RLS strategies and capabilities
B. Evaluate and prioritize approach to other HIE organizations
C. Establish connectivity to HIEs
    a. Health Bridge (Northern KY)
    b. North East Kentucky RHIO
    c. Indiana HIE
    d. West Virginia
    e. Others, as appropriate

The scope of clinical data available from patient care summaries can be augmented with Payor Based Health Records (PBHRs) available from state-based and commercial health plans (i.e. KY Medicaid and Humana, Inc.). These PBHRs generally support identification of services rendered by all providers filing claims with the health plan over the period of time that the patient is covered by that insurance. Some PBHRs also include prescription data and lab results.

In instances where health plan data are not available or are incomplete, connectivity for both submission and receipt of clinical data related to lab results and e-prescribing needs to be established. To this end, other organizations will be engaged to augment the clinical data exchange. These include:

A. State Lab data
B. SureScripts for patient prescription data

Additional value will be realized by both the provider and state/local agencies when connectivity is established to share actionable, event driven data that may otherwise be difficult to submit or retrieve. The HIE will serve as the tool to connect providers with:

A. Immunization registry(s)
B. Communicable diseases registry(s)
C. Local and State public health alerts

Future Functionality

IS 3.0 Pursue the development of future functionality, with the following priorities in mind:

1. KHIE should become the **on-ramp to state registries** that are required by ARRA (i.e., immunization, syndromic surveillance, & reportable lab data).

2. Incorporate **bi-directional functionality** with existing networks (Regional, State and National)
   Description: Develop the ability to share patient care summaries across unaffiliated organizations and networks.

3. Develop **master facility and master clinician database**
   Description: Master Clinician Index (MCI) will contain relevant information on all registered clinicians within the State, and eventually be reconciled with the State's licensure system. The Master Facility Index (MFI) will include organizational details about the connecting entities such as HIOs, hospitals, providers, and clinics.

4. Develop **secure messaging**
   Description: Allows secure clinician to clinician messaging for registered uses of the eHealth Network.

5. Develop and agree to **unique identifiers for patients**
   Description: Participate in dialog and adopt an industry standard methodology for a unique patient identifier.

6. Develop **tools for federated MPI's and RLS** as the KHIE reaches out into other HIEs.
   Description: Develop tools for communicating with other networks that may have a different infrastructure than KHIE.

7. Become the **on-ramp to the NHIN**
   Description: Proposal for a single statewide implementation of the NHIN Connect gateway available as a web service for authorized users and entities. This service is the required standard for interoperability with federal agencies, and the proposed standard for the exchange of clinical information across the NHIN.

8. Understand **"brokers" medical information systems vendor's approaches** to the problem (i.e. McKesson /Relay Health, Emdeon, Availity, Surescripts, etc.)
   Description: As EMR vendors attempt to create their own networks to allow their customers to achieve meaningful use, they may create their own networks. KHIE will need to monitor this trend and create interfaces, where appropriate.

Interdependencies and Risks

IS 4.0 Continue to identify interdependencies and risks and develop mitigation strategies to address these risks.

1. Competing and Evolving standards and the nuances of interpretation of these new standards .

   Many EMR vendors are new to the standards such as CCD that are required to make a HIE work. As these exchanged data become more integrated into the patient's record in the receiver's EMR, these nuances become more pronounced. While vendors can use tools such as the CCHIT's Laika system to validate CCDs, there will still be issues as the vendors close in on a single interpretation of these standards.

   Selection of competing standards needs to be reviewed from the perspective of the target audience, as standards that may be more technically elegant may not be as useful for the end user.

   Mitigation:
   - Participate on standards boards to understand how these issues are being resolved by other states and/or by the vendors.
   - Develop policies to ensure validation against tools such as CCHIT's Laika.
   - Develop policies to do some simple validation of data as it passes through KHIE and generate compliance feedback reports back to providers.

2. Infrastructure needs to be built to support NHIN standards.
   As it appears that the NHIN is trying to provide leadership in this arena, the question is will the NHIN compete with the state HIEs, and what role will it play? While there needs to be national guidance on implementation of HIEs, the KHIE as well as other states are very much ahead of NHIN in implementation and experience.

   Mitigation:
   - Continue to review advice from the ONC and NHIN regarding methodologies and standards evolve.
   - Subscribe to the tools, etc. offered by the NHIN.

3. Define vocabularies, and the plan as these vocabularies evolve (i.e. ICD-9 to ICD-10).

Standards will evolve but due to the complexity of the federated HIE data model, it will be logistically impossible to coordinate a network wide hard "cut over" to new vocabulary such as the impending ICD-10 migration. While the CCD does include a vocabulary encoding scheme as an attribute to each observable, there may be issues with leading edge providers and sending vocabularies that trailing edge providers may not be able to accept yet.

Mitigation:

- As a part of the KHIE's function, it may need to provide translation services to standardized vocabularies if needed by the provider.
- Communicate with providers to remind them of impending changes to vocabulary standards.

4. Offer or identify validation tools.

Validation tools will be the method used to make sure there is little variance in the interpretation of the standards. Organizations such as CCHIT have Laika, a tool to validate CCD and to help validate vendor's compliance. These are the same tools that should be used by the KHIE to do its validation.

Mitigation

- As a part of the communication plan, recommended tools should be posted to allow vendor's and provider's technical staff to certify their output.
- Provide sample KHIE output for EMR validation and a robust UAT (testing/certification database) for testing complete connectivity.
- Provide a best practice test plan for validation of new implementations of the KHIE connectivity as well as re-test for periodic re-certification during software upgrades.

5. Insure that the KHIE has met certification(s)

Certification is critical to the success of this endeavor. While it appeared that CCHIT would be the de-facto certification body, recent events have proved that CCHIT may be one of several certification bodies. This would mean that KHIE may have to meet multiple and potentially conflicting certifications.

Mitigation

- Continue to monitor the certification process as it evolves, and the organizations that will be approved to do certification.
- With the help of the KHIE Coordinating Council, determine which certification(s) will be supported.

6. Data normalization standards (who and to what standard)

   As data are collected from disparate sources that may use varying nomenclature, vocabularies or versions of tools will require that the consolidated data be normalized at the KHIE level. This process would need to be in place in order to process clinical alerts, for the provider to integrate these data into the EMR.

   Mitigation
   - Monitor best practices from the NHIN and other networks on how this function would be best performed.

7. Duplicate data will exist in the KHIE due to the federated model.

   Because the KHIE will pull from sources such as registries, insurance databases, and provider clinical repositories there will be a greater chance that the same data will exist in multiple databases. These data will need to be presented only once to the clinical staff.

   Mitigation:
   - Create technologies that de-duplicate the data before it is presented into the CCD.